THE INFLUENCE AND VALUE OF STANDARDS IN GOAL PURSUIT

by

WILLIAM MICHAEL SCHIAVONE

(Under the direction of Michelle R. vanDellen)

ABSTRACT

Past work has theorized on how the value of goal behaviors in relation to a standard may affect goal pursuit. In the current set of studies, I outline tests of how standards influence the ways people may think about goal pursuit and act differently when focused on standards. To accomplish this, I first outline research on goal pursuit and the function of goals as reference points (Chapter 1) and describe studies I've conducted to test how standards influence perceptions of goal behaviors (Chapter 2). After introducing the background, I detail studies related to the value of reference points/standards (Chapter 3), how focusing on standards may lead to missed opportunities in goal pursuit (Chapter 4), and how people may prioritize standards when standards and goals compete (Chapter 5). I conclude with a discussion of the purpose and implications of these studies.

INDEX WORDS: Goals; Motivations/Goal setting; Motivation and performance; Self-regulation

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B.S., The Ohio State University, 2015

M.S., The University of Georgia

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2022

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August 2022

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CHAPTER 1

GOAL PURSUIT AND GOALS AS REFERENCE POINTS

Goal pursuit can take many forms and can last seconds or decades. Goals are defined as mental representations of desired end states to which people direct action or inaction (Austin & Vancouver, 1996; Carver & Scheier, 1990; Kruglanski, 1996). Many goals occur over time spans that are somewhat removed from direct experience, making it difficult for people to quantify their goals as exclusively the end state. The means used to pursue these goals reduce or increase discrepancies in small quantities—each separate instance of behavior may not have a large effect on the ultimate goal (Rachlin, 1995). Accumulation of behavior leads to differences in overall goal outcomes. A dieter who wishes to lose 10lbs may not expect to lose this weight instantly but might break this goal into more manageable pieces such as 1lb per week. Evaluating whether one is making sufficient or insufficient progress toward a long-term goal is likely critical to eventually reach the goal. But how do people evaluate this progress on the days in which it occurs?

For temporally distant goals, people often interpret goal success or failure based on more proximal subgoals or standards (Bandura & Cervone, 1983; Camerer et al., 1997; Carver & Scheier, 1990; Heath et al., 1999). These standards provide a reference point or range for a person's level of aspiration (with their minimal acceptable achievement defined as a boundary goal; Corker & Donnellan, 2011). People gauge their efforts by these reference points—increasing effort when the standard is not met and shifting efforts away from the goal when achievement is over their standard (Carver & Scheier, 1990). People prefer reference points that

are clear and easy to track (Heath et al., 1999; Latham & Locke, 1979). People also tend to set goals and reference points that have round numbers (Allen et al., 2017; Pope & Simonsohn, 2011) and view conventional start dates (e.g., new year, new month) as more amenable to beginning goal pursuit (Dai et al., 2014, 2015).

A person's goals are cognitively organized into networks of goal systems, where they may associate various means with pursuit of one or more goals (Kruglanski, et al., 2002). In a standard goal systems representation, actions (or inaction) may serve subgoals that ultimately serve goals. That is, the standards people set for shorter time spans serve as goals themselves, where actions that advance a standard should advance a goal and vice versa. People form cognitive links between means and goals that are closely related. For example, affect from goal attainment can transfer to means that people use to pursue this goal (Fishbach, et al., 2004). In this way, attaining standards should provide some of the feeling of goal attainment over a shorter amount of time while advancing the main goal of interest.

Tracking goal behaviors in long-term pursuit

Tracking progress in goal pursuit provides information about proximity to the goal and effort that may be required for continued pursuit. As a result, people's interpretation and evaluations of progress may have downstream effects on goal progress, success, and failure. Though goals are often defined by distant end states, focusing on a broad time frame for a goal may obfuscate whether or not a person is exerting sufficient effort and lead to procrastination or other types of underperformance (Gröpel & Steel, 2008; Koch & Nafziger, 2009). Thus, it is reasonable for people to think through their larger goal pursuits in terms of finite and attainable standards. Segmenting goals into standards or subgoals allows for more feedback, which can increase goal-related effort due to feelings of self-efficacy (Schunk, 1990). Thinking of goals in

terms of subgoals may even be beneficial in the case of subgoal failure. When participants failed at a goal, people thinking in terms of a larger goal experienced more negative affect and lower expectancies of success than people thinking in terms of subgoals (Houser-Marko & Sheldon, 2008).

Despite the benefits of using finite standards instead of broader goals, using standards to evaluate progress may also carry some costs. When people make many choices in the context of a larger goal together, they typically choose more goal-congruent behavior than when they separately make each choice (Read et al., 1999). The use of a broader goal allows individuals to flexibly compensate for poor performance (Koch & Nafziger, 2009); however, this possibility often leads to goal-incongruent choices in a given moment (Fishbach & Zhang, 2008). This flexibility means that if a dieter overeats on a given day, eating less over the upcoming week will allow him to still progress toward his goal. However, he may *believe* he will eat less over the rest of the upcoming week and fail to do so. People can be prone to believing they will make up for violating a standard, but these compensatory beliefs lead people to be less likely to achieve their goal (Dai et al., 2014; Miquelon et al., 2012). Considering the long-term goal as a primary standard may also facilitate goal pursuit by reminding people of the value of their efforts, whereas focusing on the subgoal can shift attention to the efforts themselves (Houser-Marko & Sheldon, 2008; Rachlin, 1995).

Past work shows evidence that segmenting goal pursuits into smaller time windows is both preferred and potentially counterproductive. A study of taxi drivers found they often have mental standards for their daily income (e.g., make $100 per day in order to make $3000 each month). These drivers often spend more time working on slow days to meet their daily standard, and less time on busy days (Camerer et al., 1997). Although these daily goals may provide

motivation and assurance of adequate progress, the drivers may be either more efficient (e.g., spend fewer hours working) or exceed their goal (e.g., earn more than $3000 per month) if they were not committed to a specific daily standard when evaluating their behavior.

When tracking goal behaviors, people may have reactions to various levels of actualized goal progress in comparison to their expected or desired progress. A reduction in the discrepancy between one's current state and a desired end state constitutes success at goal progress, whereas lack of reduction (or increase) in this discrepancy is failure (Carver & Scheier, 1990, 1996; Kruglanski et al., 2002). A key question is whether a dieter would feel equally badly about an increase from 2,000 calories to 2,100 as they would about an increase from 2,900 to 3,000. This unit of change is equivalently bad for his long-term dieting outcome but because he is closer to the standard when he consumes 2,100 calories, he may not think about these changes in failure equivalently.

Goals as reference points

A well-documented line of research on Prospect Theory discusses how people subjectively weight the value of gambles: they demonstrate loss aversion and diminishing sensitivity to rewards relative to a reference point (Kahneman & Tversky, 1984). Some theoretical work has suggested that goals serve as non-status quo reference points (Heath et al., 1999; Higgins & Liberman, 2018). Heath and colleagues (1999) approached goal pursuit through the lens of the value function of Prospect theory; their myopic value model of goal setting proposes that people stop exerting effort or persisting when marginal costs equal marginal benefits. In one direct test of this idea, people expected that a hypothetical person who was closer to their goal (either above or below) would exert more effort to make additional progress than a person further away from their goal (Heath et al., 1999). People also demonstrate more

motivation to pursue a goal as they near their reference point and feel a large amount of effort is needed to pursue a goal when far from a standard (Kivetz et al., 2006). One implication of these findings is that people may perceive progress closer to the standard as more valuable than progress further away from the standard.

Other theoretical and empirical work addresses perceptions of behaviors once those behaviors indicate someone has failed at reaching a goal. Carver and Scheier (1996) discuss how self-regulatory failure may involve binary thinking and the effects of that thinking on goal disengagement. They describe self-regulation failure as a cusp catastrophe where there is an abrupt shift in perceptions across specific levels of behavior (i.e., a nonlinearity). Once a person has failed, they suggest a greater adjustment may be needed to convince the person to reengage effort. For example, if a person has a goal to not smoke any cigarettes and they smoke one cigarette, they may feel that it is no longer worth the effort to restrain themselves once this has occurred. This catastrophizing may be most apparent in situations with clear standards, or situations that require complete abstinence, as failure is notably salient once the standard has been violated (Carver & Scheier, 1996).

Empirical research supports this notion that people group together failures regardless of their severity. Participants who were manipulated to fail at a monthly savings goal reported lower commitment to their overall savings goal (Devezer et al., 2014). In this work, minor failures were considered equally as bad as larger failures. Moreover, people tend to overindulge once they have passed a critical threshold or standard for consumption. Sometimes termed the "what the hell" effect, people abandon further goal pursuit once their behaviors violate an expected standard (Cochran & Tesser, 1996). Combined, people seem to be insensitive to

increases in goal failure once they have passed a standard, interpreting both small and large failures similarly.

In an unpublished set of studies, we have demonstrated that people's perceptions of goal behaviors follow a non-linear pattern, with smaller changes in perceptions of behaviors further from a standard (See Chapter 2). Drawing on past theory and empirical patterns investigating motivation, we hypothesized that perceptions of goal-related behaviors would be non-linear and influenced by salient reference points. As a result, we expected that the increase in degree to which a behavior is considered a success should be inversely related to the distance from the reference point (with the effect mirrored for increasing levels of failure). The next chapter details the findings of these studies.

Given this past set of studies, we have considerable evidence for people's nonlinear perceptions of goal behaviors around reference points of standards. Drawing on these findings, new research questions about how these perceptions of goal behavior may influence choices, behavior, and other outcomes arise. In the focal set of studies (Chapters 3, 4, and 5), I investigate how standards for long-term goal pursuit may become overvalued relative to their contribution and lead to unintended consequences for the pursuer. Specifically, standards may influence people to a) make sacrifices for achievement or the perceptions of achievement, b) miss out on opportunities for unique progress toward an overall goal, and c) substitute the satisfaction of a short-term standard as a proxy for their main goal. If people disproportionately value standards, their desire to demonstrate standard success may come at some external cost. The present studies will explore goal situations that may make the consequences of inadvertent conflict between standards and their overarching goals apparent. This set of experiments varies the distance and

relative achievement of individuals goals to test whether standards that serve as reference points produce consequences in a systematic way.

CHAPTER 2

PERCEPTIONS OF GOAL BEHAVIORS

In a set of 5 previous studies, we tested the hypothesis that perceptions of goal-related behaviors would be non-linear and influenced by salient reference points. All data, code, and results are available at the following links:

Study 1: https://osf.io/2q5xk/

Study 2: https://osf.io/8wh4y/

Study 3: https://osf.io/msfj7/

Study 4: https://osf.io/2g5zf/

Study 5: https://osf.io/jxn95/

Supplemental: https://osf.io/m8ajs/

In Study 1, we tested the hypothesis that people would discount behaviors further away from a standard. Undergraduate students (N = 237) at a large public university in the southeast completed a within-subjects experiment for partial course credit. Participants imagined they had a goal to lose weight. To minimize prior beliefs about calories, we used a unit called “trexels” and asked participants to imagine they normally eat 100 trexels per day but are trying to eat no more than 80. Next, participants evaluated ten different values of trexels (randomized intervals of 7 trexels between 61 and 124). Within block, participants rated each value as a self-control

failure, self-control success, or guilt-inducing on scales from 1 to 7. Block order and orders of intervals within block were randomized.

We used mixed models in SAS 9.4 software to examine the rate of change in perceptions of success across intervals. We fit an unconditional model (i.e., random intercepts, no slopes; ICC = .002) as a baseline to compare model fit. Next, we fit linear, quadratic, and cubic growth models to examine change over trexel interval. The model including cubic effects had the best fit. We also ran piecewise models allowing for either intercept, slope, or both to vary after the standard. Of these models, varied intercept and slope had the best fit (AIC = 3286.1, BIC = 3338.1). However, this model did not fit the data as well as the cubic model (AIC = 3196, BIC = 3248); see Figure 1. Across two analytic methods, we observed converging evidence that people's perceptions did not match actual increases in success, even when that standard was framed in the context of a larger goal. Near a standard, changes in behavior had larger effects on perceptions of success, whereas far from a standard, changes in behavior had smaller effects on perceptions of success.

In Study 2, participants (N = 404, 48.5% male, 51.2% female; 65.4% White, 7.1% Black, 6.9% Asian, 5.4% Hispanic/Latino, 2.7% multiracial; Age, M_{age} = 36.58, SD = 12.20) from a larger study on Amazon's Mechanical Turk imagined they had a goal to lose weight and were doing so by trying to walk at least 10,000 steps per day. They then evaluated eight different behaviors (randomized intervals of 1300 steps between 5,450 and 14,550 steps along dimensions of perceived self-control success from 0 (*Not a success*) to 100 (*Extreme success;* paralleled with guilt and failure questions). Block order and orders of intervals within block were randomized.

We again fit unconditional (ICC = .125), linear, quadratic, and cubic growth models; including a cubic growth term had the best fit (see Figure 1). We also ran piecewise models that

allowed for an intercept, slope, or both to vary at the standard; the model with varied intercept and slope had the best fit of the piecewise models (AIC = 5054.9, BIC = 5111) but did not fit the data as well as the cubic model (AIC = 4890.6, BIC = 4950.6). The pattern of findings parallel Study 1 and suggest perceptions of success do not match degree of change in behavior.

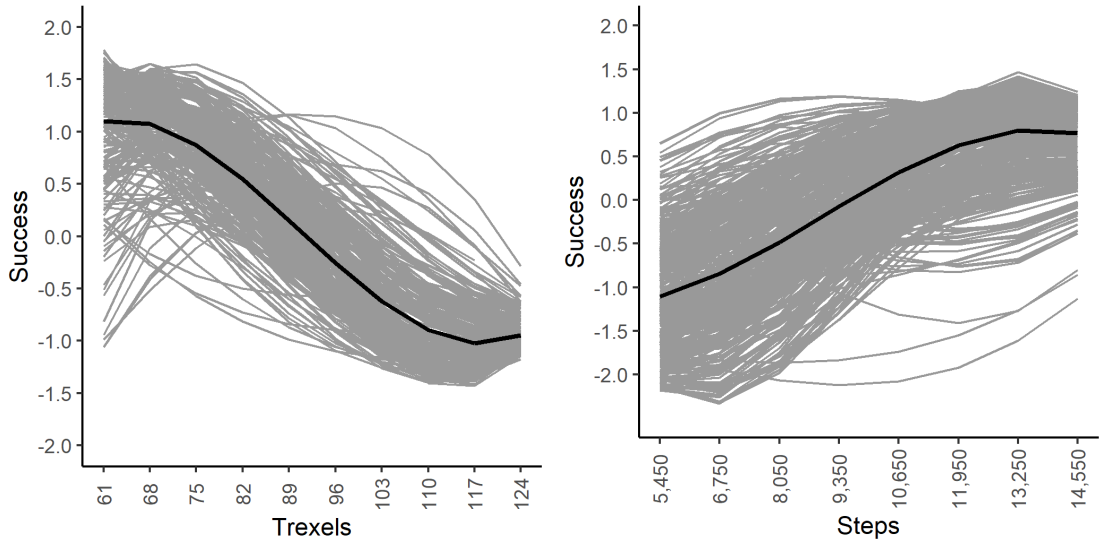

Figure 1. Cubic trend of success across trexels (previous Study 1) and steps (previous Study 2). Average slope in black; individual participants' slopes in gray.

In Study 3, we tested this hypothesis across a set of 5 inhibition and 5 initiation goals. We also explored personal relevance, attainability, and day/week framing as possible moderators of perceptions of goal behaviors. Undergraduate Psychology students (N = 411; 15.3% male, 84.4% female, 68.8% White, 10.9% Black, 11.6% Asian, 4.1% Hispanic/Latino, 3.4% multiracial; M_{age} = 18.73, SD = 3.12) completed an experimental survey in the lab for partial course credit. Participants read ten scenarios describing different goals in a random order. Each scenario adhered to the format: "Imagine you have the goal to X. To pursue this goal, you aim to [hit standard Y]. Today (This week), you have [achieved randomly assigned value]. To what extent is this goal success or failure?" with responses on a slider from 0 (*Complete failure*) to 100

(*Complete success*). Participants were randomly assigned to the either day or week condition for all goals and answered two relevance questions and an attainability question for each scenario.

There were no effects of framing or framing interaction terms, with only one exception. Given these effects, we report analyses without including framing as a main effect or interaction (see online supplemental files for full results). Participants evaluated seven out of ten behaviors (3 initiation, 4 inhibition) with the predicted cubic patterns (see Table 1). Of the three behaviors that did not match the expected pattern, one followed a quadratic trend (Save Money; initiation behavior) and the remaining two followed linear trends (Friend, Texting). We also ran separate sets of regression models for each goal substituting goal relevance and goal attainability for framing. There were no effects of relevance, attainability, or interaction terms involving relevance and attainability.

Table 1.
Nonlinear models, previous Study 3

	Cubic models				Piecewise models		
				Initiation Behaviors			
	Estimate (SE)	η^2 (90% CI)	*F*		Estimate (SE)	η^2 (90% CI)	*F*
Studying		.80 (.77, .82)	531.06****			.82 (.79, .83)	585.92****
Intercept	76.48 (1.26)			Intercept	70.68 (2.40)		
Linear	159.68 (7.40)	.23 (.18, .29)	465.94****	Linear	147.85 (8.26)	.15 (.10, .20)	320.68****
Quadratic	-135.32 (11.01)	.08 (.04, .12)	151.01****	Int Change	25.28 (3.23)	.03 (.01, .06)	61.12****
Cubic	-313.63 (43.60)	.03 (.01, .06)	51.75****	Slope change	-149.89 (11.1)	.08 (.05, .13)	182.35****
Steps		.72 (.68, .74)	334.96****			.73 (.69, .75)	355.13****
Intercept	74.93 (1.74)			Intercept	62.11 (2.37)		
Linear	128.79 (6.41)	.29 (.23, .34)	403.45****	Linear	85.40 (6.01)	.14 (.09, .19)	202.01****
Quadratic	-109.23 (29.00)	.01 (<.01, .03)	14.19****	Int Change	27.96 (4.06)	.03 (.01, .07)	47.42****
Cubic	-257.03 (50.46)	.02 (<.01, .05)	25.94****	Slope change	-71.09 (18.05)	.01 (<.01, .03)	15.51****
Yoga		.80 (.77, .82)	521.60****			.82 (.79, .83)	592.56****
Intercept	79.84 (1.20)			Intercept	78.16 (2.15)		
Linear	140.19 (7.21)	.19 (.14, .25)	378.34****	Linear	156.40 (7.33)	.21 (.15, .26)	454.72****
Quadratic	-142.82 (10.61)	.09 (.05, .14)	181.35****	Int Change	18.04 (2.97)	.02 (<.01, .04)	36.86****
Cubic	-228.94 (42.37)	.01 (<.01, .04)	29.19****	Slope change	-157.48 (10.38)	.11 (.06, .15)	230.37****
Friend		.69 (.65, .72)	296.10****			.71 (.67, .74)	321.59****
Intercept	73.74 (1.55)			Intercept	73.29 (2.78)		
Linear	116.20 (8.38)	.15 (.10, .20)	192.07****	Linear	137.87 (9.18)	.17 (.11, .22)	225.79****
Quadratic	-121.72 (13.70)	.06 (.03, .10)	78.88****	Int Change	17.48 (4.09)	.01 (<.01, .04)	18.28****
Cubic	-164.54 (51.79)	.01 (<.01, .03)	10.09****	Slope change	-142.72 (13.96)	.08 (.04, .12)	104.44****
Save Money		.75 (.72, .77)	399.34****			.78 (.75, .80)	474.96****
Intercept	72.00 (1.63)			Intercept	68.36 (2.99)		
Linear	148.33 (5.58)	.44 (.39, .49)	706.31****	Linear	201.27 (15.41)	.09 (.05, .14)	170.55****
Quadratic	-244.50 (27.23)	.05 (.02, .09)	80.64****	Int Change	25.54 (3.72)	.03 (.01, .06)	47.06****
Cubic	97.80 (45.98)	<.01 (<.01, .02)	4.52****	Slope change	-198.89 (16.37)	.08 (.04, .13)	147.68****

	Inhibition behaviors						
	Estimate (SE)	η^2 (90% CI)	*F*		Estimate (SE)	η^2 (90% CI)	*F*
Calories		.33 (.27, .38)	65.47****			.38 (.32, .43)	80.36****
Intercept	67.45 (2.00)			Intercept	87.45 (3.50)		
Linear	-92.01 (11.35)	.11 (.07, .16)	65.71****	Linear	38.59 (11.95)	.02 (<.01, .04)	10.42**
Quadratic	-87.53 (17.09)	.04 (.02, .08)	26.22****	Int Change	-30.11 (5.16)	.05 (.02, .09)	34.10****
Cubic	242.11 (67.88)	.02 (<.01, .05)	12.72****	Slope change	-98.91 (17.31)	.05 (.02, .09)	32.64****
Budget		.80 (.77, .82)	532.08****			.83 (.81, .85)	644.17****
Intercept	58.57 (1.38)			Intercept	84.01 (2.36)		
Linear	-187.39 (7.70)	.30 (.24, .35)	593.00****	Linear	-27.40 (7.67)	.01 (<.01, .02)	12.75***
Quadratic	-34.73 (11.11)	<.01 (<.01, .02)	9.77****	Int Change	-47.04 (3.40)	.08 (.04, .13)	190.94****
Cubic	448.18 (43.24)	.05 (.02, .09)	107.41****	Slope change	-38.98 (11.12)	.01 (<.01, .02)	12.29***
Sleep		.66 (.61, .69)	252.04****			.69 (.65, .72)	294.89****
Intercept	65.92 (1.68)			Intercept	91.31 (2.93)		
Linear	-168.17 (9.59)	.27 (.21, .32)	307.28****	Linear	11.46 (10.15)	0 (0, .01)	1.28
Quadratic	-83.27 (14.84)	.03 (.01, .06)	31.48****	Int Change	-43.52 (4.28)	.08 (.04, .13)	103.33****
Cubic	479.09 (58.85)	.06 (.03, .10)	66.26****	Slope change	-86.06 (14.61)	.03 (.01, .06)	34.68****
Texting		.50 (.44, .55)	130.88****			.53 (.48, .58)	148.78****
Intercept	66.05 (1.94)			Intercept	79.45 (2.46)		
Linear	-103.98 (7.56)	.24 (.18, .30)	189.08****	Linear	-24.99 (6.50)	.02 (<.01, .04)	14.76***
Quadratic	-56.47 (27.46)	<.01 (<.01, .02)	4.23****	Int Change	-29.38 (5.16)	.04 (.01, .08)	32.42****
Cubic	69.34 (51.45)	<.01 (<.01, .02)	1.82****	Slope change	-28.47 (20.87)	0 (0, 0.02)	1.86
TV		.65 (.61, .69)	251.21****			.68 (.64, .71)	287.95****
Intercept	59.65 (1.58)			Intercept	81.71 (2.74)		
Linear	-168.49 (9.48)	.27 (.22, .33)	315.94****	Linear	-16.22 (9.81)	0 (0, .02)	2.74
Quadratic	-45.85 (14.10)	.01 (<.01, .03)	10.57****	Int Change	-41.00 (4.01)	.08 (.04, .13)	104.30****
Cubic	441.76 (55.85)	.05 (.02, .09)	62.56****	Slope change	-44.73 (14.10)	.01 (<.01, .03)	10.06**

Note. All effects are presented as *F* values with 1 degree of freedom between. Error degrees of freedom range from 390-399 due to missing data.
*p < .05, **p < .01, ***p < .001

After demonstrating the consistency of this effect in multiple goal contexts, we explored how the source of a standard might affect this process. In Study 4, we explored students' perceptions of a studying goal with 3 randomly assigned standards – self-set, experimenter set, and non-salient. We expected both explicit standard conditions (externally imposed and internally set) would produce nonlinear effects, whereas perceptions of achievement in the no standard condition would be more linear. Participants (N = 280, 23.5% male, 75.7% female; 68.9% White, 15.0% Asian, 11.1% Black, 3.5% multiracial; M_{age} = 18.46, SD = 1.45) came from a larger study conducted on Undergraduate Psychology students. Participants completed items for the present study after the initial study. They were told to "Imagine you have a goal to perform your best academically this semester". Participants were randomly assigned to one of three conditions: Self-set, experimenter-set, or no standard. Based on pre-testing, participants in the experimenter-set standard condition imagined aiming to study 10.5 hours per week; participants in the self-set standard chose a standard from 0 to 21.5 hours per week (in half hour increments). Participants in the no standard condition neither received information about a standard nor were asked about one. Then, all participants rated a realized number of hours of studying (randomly generated between 0 and 21.5 hours in half hour intervals) on a slider scale ranging from 0 (*Not at all successful*) to 100 (*Extremely successful*).

Consistent with the preregistered analytic plan, we examined linear, quadratic, and cubic effects. We observed neither a cubic effect, $F(1, 266)=0.35$, $p=0.557$, $\mu^2 < 0.001$, (90% CI: 0,0), nor a cubic*condition interaction, $F(1, 266)=2.39$, $p=0.093$, $\mu^2 = 0.007$ (90% CI: 0.002, 0.004). Therefore, we ran analyses with only lower order effects (see Figure 2). As Figure 2 shows, we observed linear and quadratic effects, as well as linear*condition and quadratic*condition interactions, indicating that patterns of perceptions differed across condition. Linear and

quadratic effects were significant within each condition. Our proposed contrasts inform the effect of a salient reference point on perceptions. First, we compared the two standard conditions to the no-standard control. There was no evidence that the salience of a standard modified the curvilinear patterns. Instead, even participants who had not been asked to reflect on a specific desired amount of studying demonstrated nonlinear perceptions of behavior. Second, we compared the two standard conditions (self- vs. experimenter-set standards). This contrast did suggest that externally-set standards produce sharper curvilinear effects than do self-set standards. These findings suggest nonlinear perceptions of goal behaviors are not driven exclusively by either the salience of a standard or externally imposed standards for behavior.

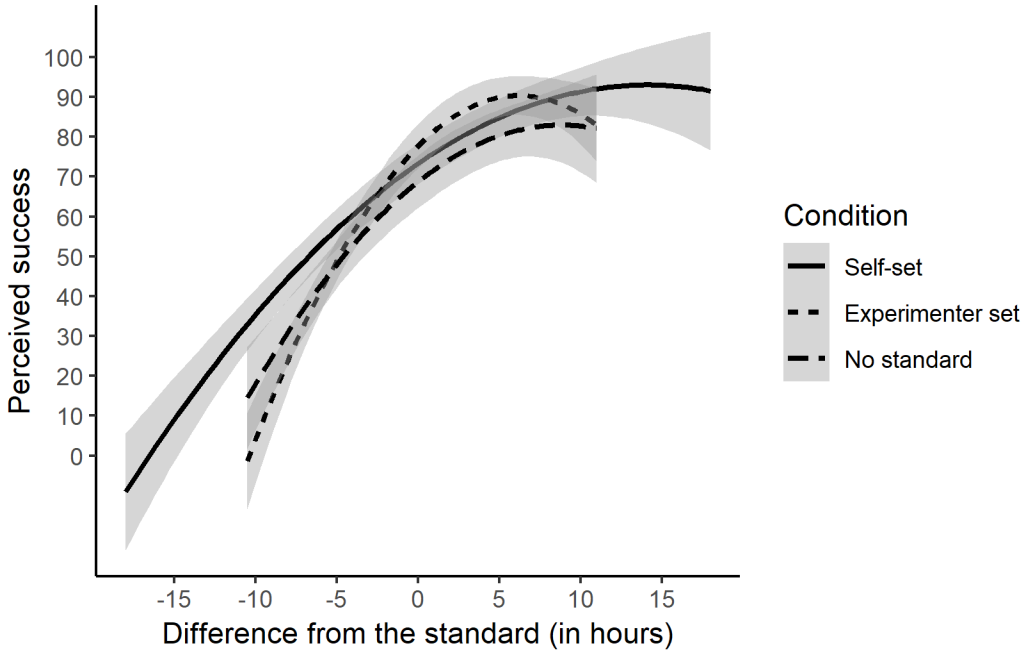

Figure 2. Perceptions of behavioral progress across standard conditions with 95% CI, previous Study 4

In Study 5, we investigated how changes in framing and goal target affect perceptions of goal behavior. Participants on Amazon's Mechanical Turk (N = 802) completed an experimental survey (average time 6.5 minutes) for $0.60. Participants imagined they or a friend had the goal

to eat 2000 calories a day and saw a random numeric value of calories between 2001 and 3000 the target ate on a day. They then responded to four items regarding the target's goal. Participants next rated the same first day in the context of the upcoming week. Following this reframing, participants saw a correction to 1500 calories on Day 2 with 2000 calories eaten for Days 3 to 7 and rated these days. Finally, participants rated the entire week with the initial violation day, the second correction and calories for other days set to 2000 (i.e., the desired standard). Thus, the week presentation reflected continued success or failure relative to the standard (possibly muted by the neutral performance of the additional days). Participants then answered a parallel set of questions about a daily step goal for the same target (see Figure 3). For both goals, we found significant linear and quadratic effects.

Behaviors further away from the reference point did not lead to similar changes in perception of success as did behaviors closer to the reference point (see Figure 4). We observed a steeper curve for self (vs. other) for the calories goal but not the steps goal. In the initial week reframing, we continued to observe quadratic effects of a similar effect size for both goals and no differences in pattern of responses (linear or quadratic) across target. When we presented participants with the rest of the week, we found no significant effects of the initially presented amount of behavior and for the full week evaluation we observed very few effects of the initial behavior. Across both goals, a linear pattern of perception remained but this was not significant for steps.

Although Study 4 demonstrated that salience of a standard was not required for nonlinear effects to emerge, Study 5 addressed one remaining possibility for the effect: that non-linear perceptions are driven primarily by numerical biases related to overattention to a particular standard. If nonlinear perceptions are driven only by effects of numerical cognition, the degree of

non-linearity should be similar across goal target (i.e., self vs. other). In contrast, non-linear perceptions could reflect motivated cognition related to effort management or self-protection. People may be motivated to engage with other goal pursuits (Carver, 2003; Fishbach & Dhar, 2005; Louro et al., 2007) and thus come to see progress as no longer valuable after a local standard. We found some evidence that nonlinearity was larger when thinking about the self's behavior (vs. another person), suggesting nonlinearity may also be partially motivated. Because the effect occurred for both self and other, nonlinear perceptions of failure likely do not reflect entirely motivated self-serving biases. However, the effects were stronger for self than other, suggesting that nonlinear perceptions of goal-relevant behavior may play some role in justification for lack of achievement in goal pursuit (De Witt Huberts et al., 2014). Nonlinear perceptions did disappear when participants considered the week as a whole with a correction. Thus, perceptions are more linear when a goal is reframed in a broader unit of time with a partial

or sufficient correction, but this return to linearity may be due to the overall amount of failure being diluted by the relative success throughout the remainder of the week.

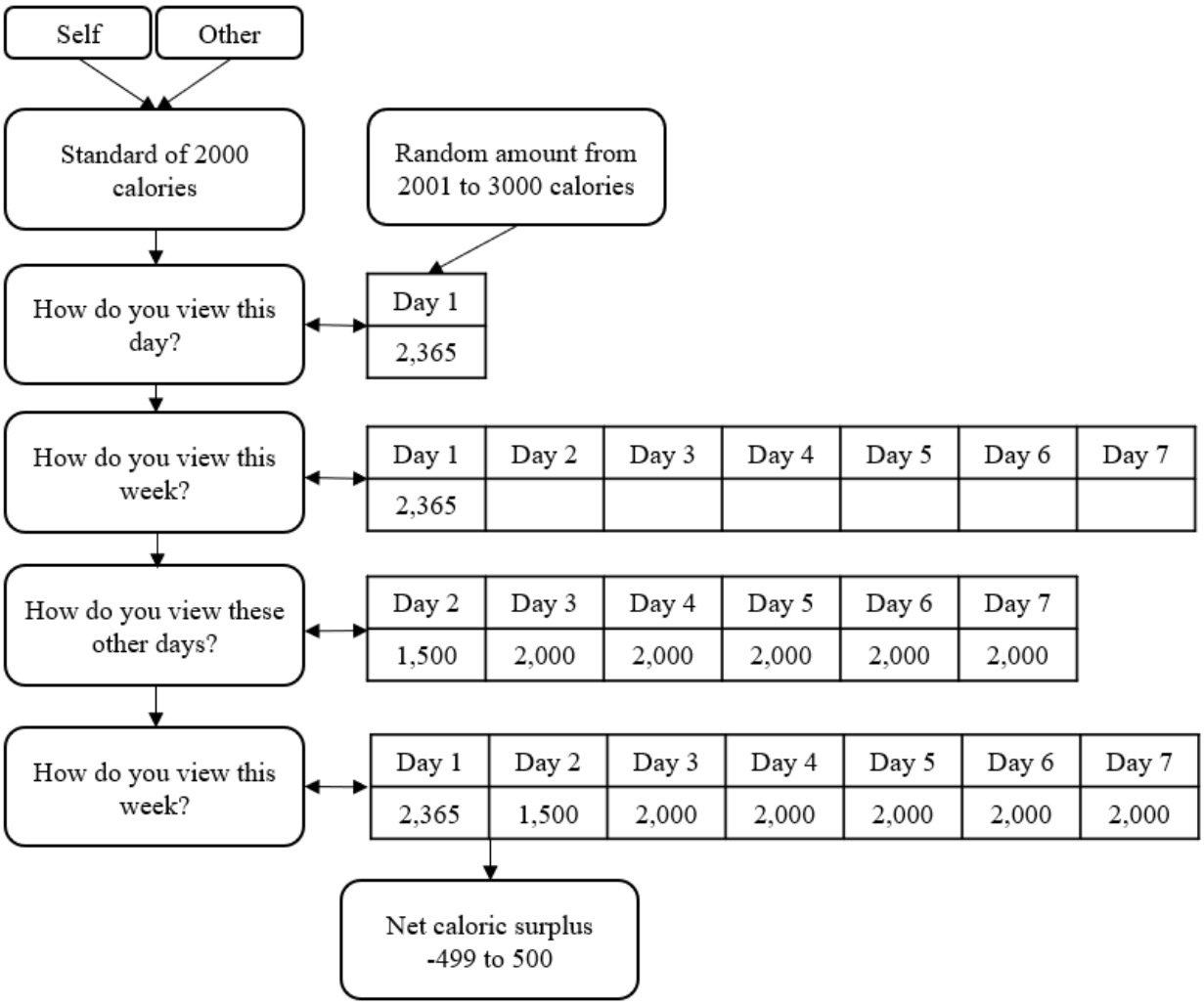

Figure 3. Visual representation of the method of previous Study 5.

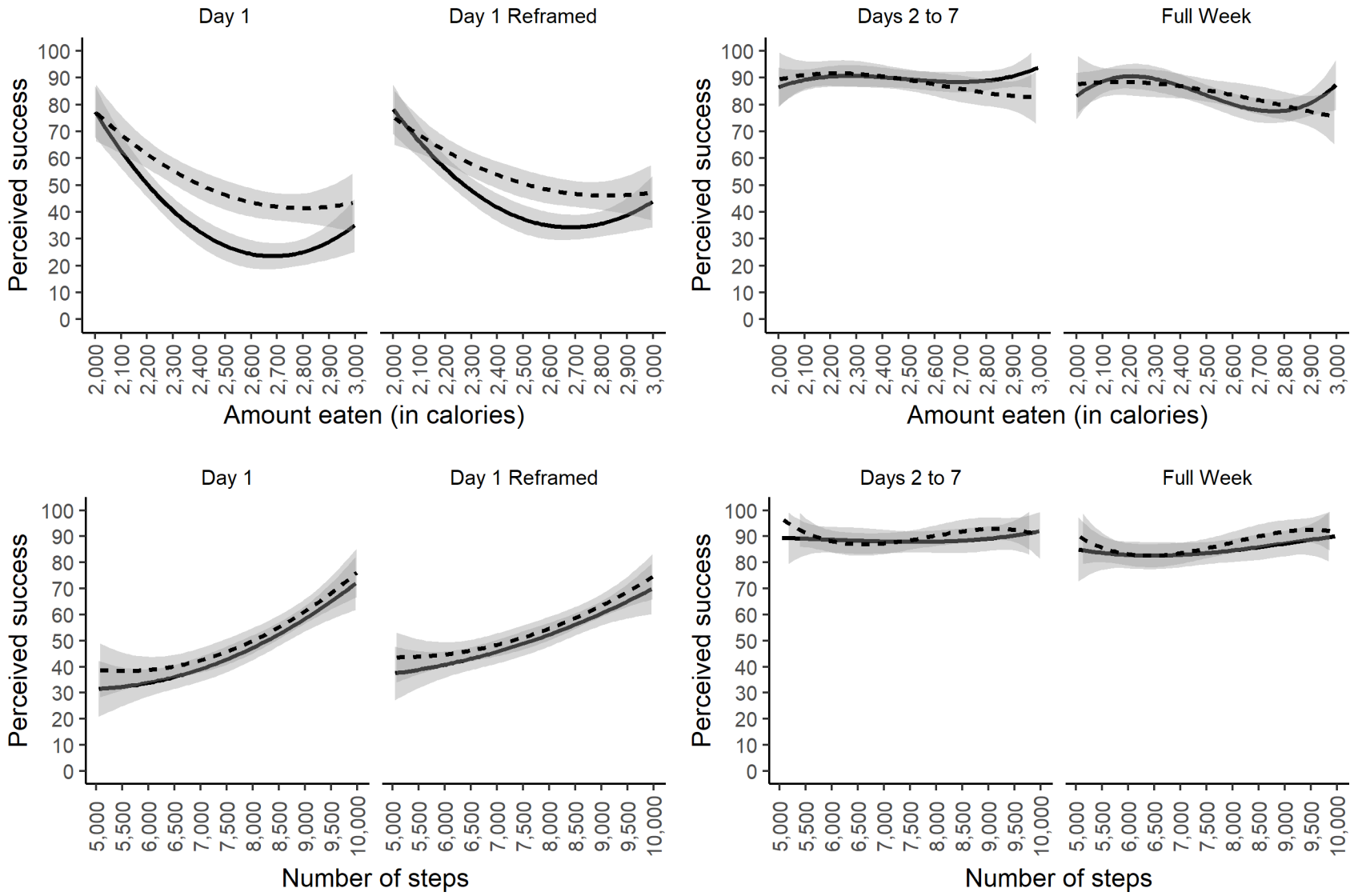

Figure 4. Polynomial trend of success across Calories/Steps goals across time frames and correction with 95% CI, previous Study 5

CHAPTER 3

VALUE OF REFERENCE POINTS/STANDARDS

Achieving goals provides value for the pursuer (Austin & Vancouver, 1996; Diener et al., 1999; Kruglanski, 1996). Value increases the closer one is to the reference point until it is surpassed, where perceived rewards diminish further past the standard (Heath, et al. 1999). Within a goal system, subgoals (or standards) function as means to attaining the overall goal while also serving as goals themselves (Kruglanski, et al., 2002). Because subgoals are still goals, people should value subgoal attainment in the same way they value goal achievement. To the extent that a goal is valued and this value transfers down to subgoals and means, people should view subgoals themselves as valuable. When this transfer occurs, attaining standards should feel important simply by being goals themselves, while also feeling important because of their function in serving the overall goal.

Many theoretical models of goals suggest that people will exert more effort when they are close to hitting a goal or standard because of the increased value of progress as the standard approaches (Carver & Scheier, 1990; Förster et al., 1998; Heath et al., 1999; Kivetz et al., 2006; Koo & Fishbach, 2012). In other words, progress should be worth most to a person when it means that they can achieve a standard. For example, the goal looms larger effect suggests that when people are close to achieving a goal, they focus on the goal more and may be willing to shift focus from other goals to secure goal attainment. In the case of standards, the goal looms larger effect should occur more often, and the opportunity to achieve these smaller standards should create more instances that shift people's attention to pursuing these standards. However,

limited research has tested whether these perceptions of value manifest in changes in behavior, instead assumptions have been made that perceived value will influence behavior.

I expect that people will value standard achievement at a cost of other resources or values. As a result of the increased value of increments of goal behavior near standards, people may be willing to accept trade-offs to cross the standard's threshold. If standard achievement becomes important enough in its own right, people may even be willing to make trade-offs for the feeling of having hit a standard. That is, people may seek to experience the feeling they get from having hit a standard even if it comes at some cost.

The first set of studies examined whether people would dedicate time and mental resources to making goal scenarios appear as if they had achieved the standard. If standards drive perceptions of value, means to attain these standards may seem disproportionately valuable and lead to sacrifices in other goals. In Study 1a, I tested whether people would spend additional time (and indirectly money) adjusting a goal scenario so that they will have hit a standard. In Study 1b, I tested whether people would lie to report hitting a standard in a situation with low accountability because of the increased value of achievement. These studies are designed to show that people value even just the idea of hitting a standard, as Study 1a offers a retroactive fix to a goal schedule and Study 1b would require lying to report hitting the standard (in cases of subpar achievement). Specifically, choosing options to mark standards as completed come at indirect costs to participants who choose to do so – Study 1a should require more time to evenly mark out standards and Study 1b may come at a moral cost of dishonesty. In Study 1a, I experimentally manipulated participants' relative success to examine how being close to a standard may influence judgements, and in Study 1b I manipulated whether or not a standard was

salient. These manipulations should allow for different perspectives on how standards may influence thoughts and behavior.

In the current set of studies, I tested a variety of hypotheses related to goal standards and their relationships with goals. All data, study materials, code, and preregistrations are available at the following links:

Main page (all studies): https://osf.io/d2v9g/

Study 1a: https://osf.io/9ewzf/

Study 1b: https://osf.io/wu7dq/

Study 2a: https://osf.io/n9k8d/

Study 2b: https://osf.io/ydfw6/

Study 3: https://osf.io/fyg52/

Study 1a – Exchanging standard success for value (as time/money)

Participants

Participants were recruited online through Prolific. Based on an expected average effect size of Cohen's d = .43 (Richard et al., 2003; f = .215) and target power of .80, 213 participants were recruited (M_{age} = 32.44, SD = 11.96; 70.89% White, 5.63% Hispanic or Latino, 7.51% Black or African American, 0.47% Native American or American Indian, 9.39% Asian/Pacific Islander, 5.63% Mixed Race, 0.47% self-described). All adults 18+ in the US who indicated English was their first language on the platform were eligible to complete the study.

Procedure

Participants consented and viewed a scenario where they were told to imagine they have a goal to walk 10,000 steps every day and that they would view hypothetical amounts of steps

they had walked over the past hypothetical week. They then were told to imagine they had the power to go back in time and allocate additional steps to days that had already occurred. Participants then were randomly assigned to one of three conditions for number of steps walked each day on a previous week. Participants in the low condition saw values ranging from 1000-1,399, close failure condition saw values ranging from 9,600-9,999, and close success saw values ranging from 10,000-10,399. With these values, participants were told they could allocate 1400 additional steps to individual days from the previous week and to make sure they allocated all 1400 steps (participants could only progress if all steps were allocated; see Figure 5). Participants entered values across from each day and the total steps allocated was present just below the 7th day. Finally, participants completed the Capacity for Self-Control scale (Hoyle & Davisson, 2016) and demographics items.

Results

I expected that participants in the close condition would spend more time allocation steps than participants in the low or over conditions. To test this hypothesis, I conducted a one-way ANOVA of condition on time spent on the task. I found that condition did not have a significant effect on time spent on the task, $F(2, 210) = 0.58$, $p = .559$, $\eta^2 = .006$, 90% CI [0, .026]. Most participants allocated steps across all 7 days (80.8%; $n = 172$). Within specifically the condition close but under the standard, 20% ($n = 14$) of participants provided numbers to meet the standard for 6 out of 7 days, whereas only 7.1% ($n = 5$) provided numbers that made none of the days meet the standard (due to an allowance of 1,400 steps and participants being 1,741 steps short, not all 7 days could be attained simultaneously).

An alternative way of assessing how much effort a person allocated to the task is to measure how much variability exists in their response to allocating steps across days. As an

exploratory analysis, I conducted a one-way ANOVA of condition on the standard deviation of each person's individual allocation of steps across all 7 days. I found that condition had a significant effect on standard deviation of steps allocation, $F(2, 210) = 5.34$, $p = .005$, $\eta^2 = .048$, 90% CI [.009, .098]. Specifically, those in the close condition ($M = 150.53$) had a higher standard deviation of steps than those in the combined low and over conditions ($M = 96.46$), $t(210) = 2.04$, $p = .042$, $d = .47$.

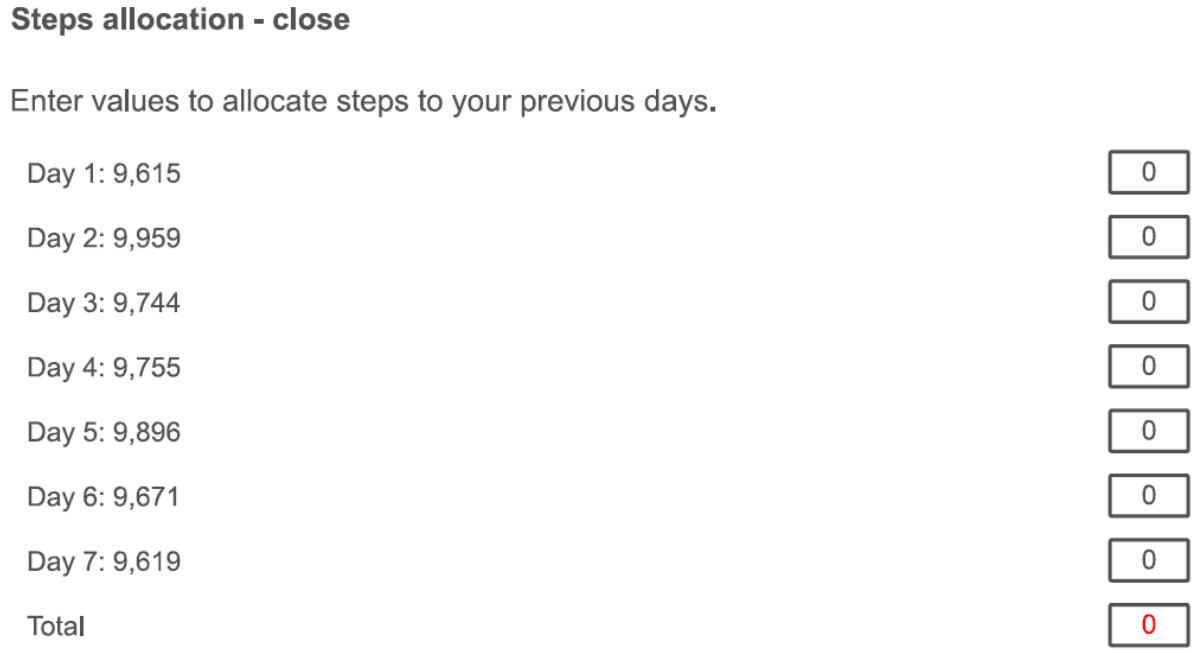

Figure 5. Stimuli for near but not past the standard condition, Study 1a.

Study 1b – Exchanging standard success for value (as morality)

Participants

Participants were recruited through the Undergraduate Psychology participant pool and completed the study at a research lab on campus. Assuming an effect size of Cohen's $d = .43$ ($f = .215$) and target power of .80, I aimed to recruit 172 participants; after the final participation time slots were posted, we collected 199 participants ($M_{age} = 19.42$, $SD = 1.23$; 61.81% White, 6.53%

Hispanic or Latino, 11.06% Black or African American, 18.59% Asian/Pacific Islander, 2.01% self-described).

Procedure

Participants consented and read that they would be completing a word game that tests their ability to come up with creative solution to word puzzles. Participants then saw instructions for the word game. They read that each trial of the game would last 2 minutes, that there were many possible solutions to the word puzzles presented, and that their scores would be determined by their ability to think creatively and provide words that others had not provided for the task in the past. Participants saw several examples of the game, where participants could enter up to 5 words as solutions to a 5 x 5 grid of letters and spaces by fitting the grid forward, backward, upward, or downward. Participants were then randomly assigned to see an ostensible average score of past participants that would serve as a standard, or simply told to do their best to get the highest score they could. Participants then completed 8 rounds of the word game with a 2-minute timer and instructions reminder present on the screen. Each puzzle automatically advanced after 2 minutes, and participants could choose when to begin the next game. After completing all trials, participants saw as score of 237 presented, and told their score was in the bottom 20% of other players. Participants then clicked through to a follow up page that displayed an error, and told that their score should be presented, but to enter their score in the box if it was not present (all participants saw the error; $M = 241.11$, $SD = 25.61$). Finally, participants completed the

Capacity for Self-Control scale (Hoyle & Davisson, 2016), demographics items, and funneled debriefing items.

Results

I expected participants in the standard condition would lie by a larger amount on their self-reported score compared to the do-your-best condition. To test this hypothesis, I conducted a t-test of condition on self-reported score. There was not a significant difference between the standard (M = 243.39, SD = 23.39) and do-your-best (M = 238.14, SD = 28.13) conditions on self-reported score, $t(185) = -1.39$, $p = .165$, $d = -.21$. There was one participant who reported a score of 20 and others who reported scores below the actual score of 237, which could have influenced the results; however, removing these scores still maintained the non-significant effect, $t(174) = -0.86$, $p = .390$, $d = -.13$.

The data failed the Shapiro-wilk test for normality, and another possibility for the present hypothesis is that people in the standard condition lied more often than the do-your-best condition, even if the difference in amount was not statistically significant. To test this extension of the hypothesis, I used a chi-squared test to determine if there was significant difference among condition on proportion of participants who lied when self-reporting their score. Results indicated that 12.34% of the do-your-best condition reported an inflated score whereas 26.42% of the standard condition inflated their score. The observed frequencies were significantly different from the expected frequencies, $\chi^2 = 5.61$, $p = .018$, $\varphi = .17$.

CHAPTER 4

CONSEQUENCES OF FOCUSING ON STANDARDS

Many goals occur over lengthy time spans that are not amenable to easily keeping track of pursuit. As a result, people often break down goals into smaller subgoals or standards that reduce or increase discrepancies in small amounts, cumulatively leading to progress or lack of progress (Rachlin 1995). Standards can motivate people to exert more effort on a goal and lead to benefits such as increased progress (Schunk, 1990), but can also lead to negative outcomes for goal pursuit such as decreased efficiency (e.g., Camerer et al., 1997).

In some instances of failure, people may fall victim to the "what the hell" effect, where goal pursuit is temporarily abandoned when a standard has been violated (Cochran & Tesser, 1996). Similarly, focusing on standards may lead to inefficiencies depending on situational factors (e.g., taxi drivers spending more time on less efficient days; Camerer et al., 1997). These effects suggest that one result of evaluating goal progress in terms of standards is that people may mentally segment each standard, or piece of long-term goal pursuit, which can then lead to negative effects on long-term goal progress. Because standards serve to benefit overarching goals, attaining standards should feel valuable both as a goal and as progress toward that eventual end state. However, many instances of subgoal attainment may be required for eventual success and overweighting any given standard may be detrimental to opportunities for overall progress.

Focusing on standards for goal pursuit may create situations where people miss out on unique opportunities to make quick or highly valuable amounts of progress. In situations where

people hit a given standard, they may feel as though they have made enough progress for the day (or other time span) and reduce their effort, even in cases where additional effort could provide disproportionate progress. In this way, the feeling of having attained a standard could function to compete with overall goal progress.

In Studies 2a and 2b, I aimed to demonstrate that people may forego the opportunity for affordances when they have met an arbitrary standard more often than when they have not met the standard. That is, when people have achieved a standard, they may be more likely to miss out on unique opportunities for additional progress in the same time span. In Study 2a, I experimentally manipulated participants to be just above or just below a standard. This design should allow for a test of how standards may exert an undue influence on evaluations of opportunities. In Study 2b, I experimentally manipulated standard success or failure, as well as relative extremity. This design should allow for an expanded look into how relative distance from a standard changes how people experience feelings related to these standards. Together, these studies investigated how people's interpretation of the value of goal behaviors relative to goal reference points might influence goal progress and tangential action.

Study 2a – Missed opportunities when beyond a standard

Participants

Participants were recruited online through Prolific. Based on an expected average effect size of Cohen's d = .43 (Richard et al., 2003; f = .215) and target power of .80, I aimed to recruit 172 participants; 171 participants were recruited (M_{age} = 24.70, SD = 7.15; 63.95% White, 11.63% Hispanic or Latino, 6.40% Black or African American, 9.30% Asian/Pacific Islander, 7.56% Mixed Race, 1.16% self-described). All adults 18+ on the platform in the US who

indicated they were students and spoke English as their first language were eligible to complete the study.

Procedure

Participants consented and read a scenario where they were told to imagine they had an upcoming exam on a difficult subject a week away and decide to set a goal to study for 2 hours a day, every day, for the week prior to the exam. They then read that before they began studying, they decided to reach out to a tutor but find out that the tutor will not have any availability until after the exam. Participants were then randomly assigned to see that they had studied either 1 hour and 55 minutes or 2 hours and 5 minutes at the end of their studying session. As they pack up their things, the tutor emailed that a new opening was available for that afternoon. Participants indicated how likely they would be to take up the tutor's offer for a session later that afternoon (slider scale 0% - 100% likely; $M = 67.31$, $SD = 25.96$), the likelihood of hitting their studying goal on the next day (slider scale 0% - 100% likely; $M = 68.90$, $SD = 24.64$), and how well they think they are likely to do on the exam (slider scale 0 Not at all well - 100 Very well; $M = 78.83$, $SD = 14.24$). Finally, participants completed the Capacity for Self-Control scale (Hoyle & Davisson, 2016) and demographics items.

Results

I expected participants would indicate they are less likely to take the opportunity to meet with the tutor when they have met the standard than when they have not met the standard. To test this hypothesis, I conducted a t-test of condition on likelihood to take up the tutor's offer. There was not a significant difference between the below standard condition ($M = 68.76$, $SD = 26.49$)

and above standard condition (M = 65.87, SD = 25.50) on their reported likelihood of seeing the tutor, $t(170) = -0.73$, $p = .468$, $d = .11$.

I also conducted exploratory analyses using condition to predict expectations. I conducted a t-test of condition on expected performance on the exam. There was not a significant difference between the below standard condition (M = 78.26, SD = 15.26) and above standard condition (M = 79.41, SD = 13.20) on expected performance, $t(170) = 0.53$, $p = .597$, $d = .08$. I also conducted a t-test of condition on likelihood of attaining the standard for the next day, and there was not a significant difference between the below standard condition (M = 72.15, SD = 21.63) and above standard condition (M = 65.65, SD = 27.06), $t(170) = -1.74$, $p = .084$, $d = 0.27$.

Study 2b – Missed opportunities when recalling standard success

Participants

Participants were recruited through Prolific. Assuming an effect size of Cohen's $d = .43$ ($f = .215$) and target power of .80, 172 participants were recruited (M_{age} = 34.67, SD = 13.36; 70.76% White, 7.02% Hispanic or Latino, 11.11% Black or African American, 1.75% Native American or American Indian, 4.68% Asian/Pacific Islander, 4.68% self-described). All adults 18+ on the platform were eligible to complete the study.

Procedure

Participants consented and were asked to recall a scenario in the past where they were pursuing a goal and tracking their performance in a health, education, career, or financial goal. Participants who could successfully recall this type of situation were eligible to participate and asked what their goal was, what behaviors they were tracking to make progress toward the goal, and how important their goal was to them (1: Not at all important – 7: Extremely important; M = 6.27, SD = 0.88). Participants were then randomly assigned to think about scenarios where they

either successfully met a standard or failed to meet a standard in either extreme or minor instances and asked to describe what happened and how they felt as a result. Participants then were presented with a set of five hyperlinks to articles related to their goal domain and told these articles may be helpful for pursuing their goal. Code within the survey detected whether each link was clicked (0 to 5 links out of 5 links total; links were specific to each condition). Finally, participants completed the Capacity for Self-Control scale (Hoyle & Davisson, 2016) and demographics items.

Results

I expected people would be less willing to seek out additional information about their goal (i.e., click on less article links) when recalling a past goal experience where they have met their daily goal. Further, people who recalled instances of minor failure should click more articles than people who recalled extreme failure and those who recalled minor success click more articles than those who recalled extreme success. That is, people's willingness to seek out additional information or help about a goal should relate to their recalled performance relative to a standard. I used a Poisson regression to test whether people who failed clicked on more links, and whether this effect depended on the amount of failure. There was no main effect of goal state (success/failure) on number of links clicked, B = -.18, 95% CI [-0.96, 0.55], z = -0.48, p = .633 or amount (minor/major) B = 0.39, 95% CI [-0.21, 1.01], z = 1.27, p = .204. There was also no interaction of goal state and amount, B = -.65, 95% CI [-1.68, 0.38], z = -1.25, p = .210.

An alternative way to conceptualize interest in seeking out additional information about the goal is by determining whether participants clicked any of the links or skipped through the page without clicking. Using the click data from each link, I created a new variable that indicated whether participants clicked any of the links, or no links. Using this new click variable as an

outcome, I conducted a logistic regression with the same predictor variables of interest. As with the initial analysis, there was no main effect of goal state (success/failure), B = -0.40, 95% CI [-1.65, 0.75], z = -0.66, p = .508, or amount (minor/major) B = -0.03, 95% CI [-1.09, 1.02], z = -0.05, p = .962, on whether any links were clicked. There was also no interaction of goal state and amount, B = 0.17, 95% CI [-1.41, 1.82], z = 0.21, p = .831, on likelihood of any links being clicked.

CHAPTER 5

STANDARDS COMPETING WITH GOALS

For the final study, I investigated situations where achieving standards may become seemingly more important than making progress toward the long-term goal. In some situations, people may become overly focused on achieving standards, even if this small accomplishment does not result in overall goal achievement. Assuming people have limited mental resources, goals compete in a constant-sum game where allocating more resources to one goal takes away possible resources from other goals. That is, active goals compete with each other, and means may compete for action such that a decision between them is required.

In the case of a goal-subgoal relationship, most means for pursuit should serve both goals (i.e., multifinal means; Kruglanski et al., 2015), but some instances may require trade-offs or choices between temporal achievement. Studies 2a and 2b investigated situations where standard attainment could have affected overall progress if people were not willing to utilize opportunities available when they had already attained a standard. In a similar way, a desire to hit a standard could come at a cost to an overarching goal if some type of risk is required. For example, a runner who is training for a marathon may decide whether to stop or continue a workout when targeting certain mileage as a standard on a run when faced with ankle pain that could result in injury. This runner may choose to complete the run at a possible cost to their health and ability to eventually accomplish their goal of running a marathon or may decide to stop at the cost of

missing their daily standard. In this way, somewhat unique situations may occur where a standard competes with the goal it is intended to serve.

Further, the link between subgoals and goals should lead to people experiencing some level of reward for achieving subgoals that is disconnected from the overall goal. For this reason, people may come to value the feelings associated with hitting the standard to the extent that actual progress is not their focus, but rather the notion of having met the standard's metric. That is, in situations where repeated goal pursuit contributes to some overall goal, people may make the choice to advance achievement of their standard at a possible cost to the overall goal.

I expected that people's interpretation of the value of goal achievement in relation to a standard would lead to downstream consequences when subgoals conflict with overall goals. In Study 3, I examined whether people may sometimes value subgoal success disproportionately highly relative to overall goal attainment. For this final study, there were no experimentally manipulated differences between participants, but scenarios were designed to create a choice between option that advanced a standard at risk of a long-term goal, or an option that hurt a standard to maintain progress toward the long-term goal.

Study 3 – Substitution: Valuing standards more than overall progress

Participants

Participants were recruited through Prolific. Assuming an effect size of Cohen's d = .43 (f^2 = .046), 2 predictors, and target power of .80, 200 participants were recruited (M_{age} = 37.38, SD = 13.88; 76.00% White, 5.00% Hispanic or Latino, 6.50% Black or African American, 5.50%

Asian/Pacific Islander, 6.50% Mixed Race, 0.50% self-described). All adults 18+ in the US who indicated English was their first language on the platform were eligible to complete the study.

Procedure

Participants consented and were presented with 16 scenarios that they were told represent situations in which they may need to decide between two options. They were instructed to move the slider to indicate how much they would feel pulled in the direction of each option (slider scale 0 - 100). Each scenario was represented by two competing options, where one option represented a choice to advance a standard at the possible cost of long-term progress, whereas the other option represented a choice to fail at a standard with less risk to the overall goal. For example, one scenario consisted of a slider scale choice between "Go over your daily spending amount by $5 to use a coupon that will expire" and "Risk going over your monthly saving budget by $5 because you didn't use the coupon before it expired". Each scenario represented a possible conflict between a short-term standard and the long-term goal it was working to serve. After all scenarios were presented, participants completed the Capacity for Self-Control scale (Hoyle & Davisson, 2016), BFI-2-S (Soto & John, 2017), and demographics items.

Results

Means, standard deviations, and correlations with personality traits are presented in Table 3. Applicable items were reverse scored so that ratings higher on the scale indicated more of a preference for the long-term goal over the short-term standard. Most scenarios were near the midpoint between options, indicating that participants may have had difficulty choosing one option over the other if faced with a decision between the two. However, some situations were rated as closer to endpoints, suggesting people may have a stronger preference between the two options in these cases. For instance, in the performance enhancing drug/avoiding drugs scenario

people indicated more of a preference for avoiding the drug in service of their long-term goal of health; this response is mirrored in the workout/injury scenario. Similarly, people indicated they would reject a sponsorship that may hurt their long-term reputation and preferred to use the same amount of fertilizer on a field to avoid damaging future production.

When examining the relationship of responses to scenarios and personality traits, there were no consistent findings. Ratings of some situations did correlate with personality traits, but results should be interpreted with caution because of the number of scenarios presented. A preference for the choice to skip extra work on a weekend was negatively related to extraversion, conscientiousness, and self-control, and positively related to negative emotionality. A preference for a slow and steady diet over a strict diet was positively related to agreeableness and conscientiousness, and negatively related to negative emotionality.

I conducted an exploratory Latent Profile Analysis to determine if there were any patterns among participants' ratings of the 16 scenarios (Spurk et al., 2020). Based on BIC values, the best fitting model was a 3 profile VVI (diagonal, varying volume and shape) model, BIC = -29,986.44. Profiles are visually represented in Figure 6; as the presented situations did not have any inherent order, mean values were sorted according to profile 3. Individual scenarios were not highly related to responses on other scenarios; after reverse coding scenarios 7 and 10 based on negative correlations, the scales still had a low overall relationship, $\alpha = .54$.

Using these latent profiles, I conducted exploratory ANOVAs on each trait of the Big 5 personality scale (BFI-2-S; Soto & John, 2017) and capacity for self-control (Hoyle & Davisson, 2016). There was no effect of profile membership on extraversion, $F(2, 196) = 0.82$, $p = .442$, $\eta^2 = .008$, 90%CI [0, .034], agreeableness, $F(2, 196) = 0.04$, $p = .957$, $\eta^2 < .001$, 90%CI [0, <.001], or conscientiousness, $F(2, 196) = 0.67$, $p = .514$, $\eta^2 = .007$, 90%CI [0, .030]. There was also no

effect of profile membership on negative emotionality, $F(2, 196) = 0.76$, $p = .469$, $\eta^2 = .008$, 90%CI [0, .032], or open-mindedness, $F(2, 196) = 0.38$, $p = .687$, $\eta^2 = .004$, 90%CI [0, .022]. Finally, there was also no effect of profile membership on capacity for self-control, $F(2, 196) = 0.56$, $p = .569$, $\eta^2 = .006$, 90%CI [0, .027].

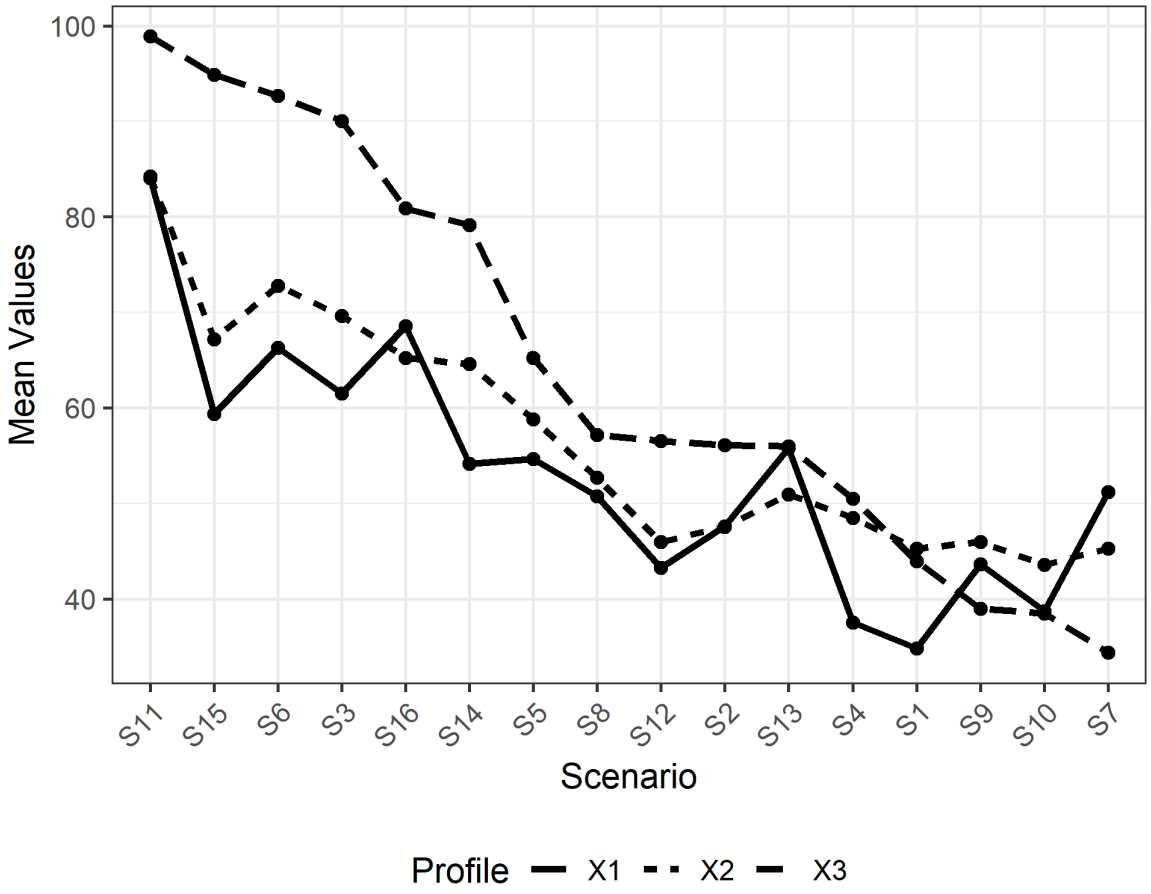

Figure 6. Latent profiles based on standard-goal conflict situations presented to participants, Study 3.

Table 2.

Standard-goal conflict situations scenario list, Study 3.

Scenario	Left option	Right option
Coupon/savings*	Go over your daily spending amount by $5 to use a coupon that will expire	Risk going over your monthly saving budget by $5 because you didn't use the coupon before it expired
Larger item/budget*	Buying a product in a larger size that is on sale, even though it goes over your weekly budget	Buying the regular sized product and missing the sale, but sticking to your budget
Work overtime/skip	Work overtime this weekend even though you're starting to feel burnt out	Skip work this weekend at the risk of not being caught up
Stay at job/move job	Staying at a job that meets where you had planned to be in your career at the moment	Moving to another job that means taking a step back but might help you meet your goals in the future.
Small parts of project/larger section	Completing many small parts of a project instead of one larger section of at the cost of less progress overall	Completing the larger section of the project for more progress, but with more missing pieces
Risky sponsorship/refusing	Accepting an offer for a sponsorship that might damage your reputation but make more money in the short-term	Refusing an offer for a sponsorship that might damage your reputation even though you are missing out on more money in the short-term
More fertilizer/same amount	Using more fertilizer on a relatively dry year to keep up with your yearly goal at the risk of worse soil in upcoming years	Using the same amount of fertilizer at the cost of missing your yearly goal, but no increased risk of worsening soil
Learn basics/planned material*	Spending more time learning the basics of a course at the risk of falling behind	Continuing to stick with the plan for course material, even if you feel the basics are still unclear
Staying up to study/sleeping	Staying up all night studying for an exam you might fail at the risk of doing worse on another exam you feel confident about from sleep deprivation	Going to bed at a normal time and possibly failing the exam

Scenario	Left option	Right option
Workout/injury	Continue your workout to hit your daily goal even though you are noticing pain that might become an injury	Stop your workout before you're finished in case you might get injured
Strict diet/slow diet	Following a strict diet, at risk of overeating on individual days	Making small changes that lead to slower dieting progress than you would like, but are more sustainable
Forcing exercise/skipping workout	Trying to force yourself to exercise for the daily amount you planned on for the day even though it may make you feel worse and abandon your goal of exercising altogether	Skipping a workout so that you'll be more likely to continue with your plan to workout in the future
Performance drugs/avoiding drugs	Using performance enhancing drugs to meet your performance goal in an upcoming competition, at the risk of possibly harming your performance later in your career	Avoiding performance enhancing drugs at the risk of not performing as well in upcoming competitions
Medicine/temporary symptoms	Taking medicine that reduces temporary symptoms to feel your best today at the risk of making the symptoms last longer	Avoiding the medicine and experiencing more temporary symptoms
Traffic shortcut/planned route	Taking a shortcut to your first destination to keep on schedule at the risk getting caught in traffic and increasing the overall delay	Continuing on the planned route and being behind schedule with no increased risk of popping a tire
Stopping hike/continuing*	Stopping your hike before seeing all destinations because you have a blister forming	Continuing to finish your hike for the day even though you have a blister, at the risk of missing out on other upcoming hikes

*Reverse scored item

Table 3. Scenario means, standard deviations, and correlations with personality traits

	Scenario	*Mean*	*SD*	Extraversion	Agreeableness	Conscient	Negative Emotionality	Openness	Self-Control
Financial	Coupon/savings†	58.19	27.70	0.11	0	0.08	0.04	0.05	0
	Larger item/budget†	54.15	31.35	0.03	-0.06	0.01	0.04	0.06	-0.04
Work	Work overtime/skip	50.03	31.29	-0.27***	-0.13	-0.31***	0.25***	-0.07	-0.32***
	Stay at job/move job	53.41	27.21	0.01	0.04	0.05	0.03	0.11	0.08
	Small parts of project/larger section	40.67	25.32	0.18*	-0.07	-0.01	0.04	-0.15*	0.02
	Risky sponsorship/refusing	72.91	24.83	-0.03	0.15*	0.06	0.01	0.08	0.08
	More fertilizer/same amount	70.74	21.18	0.07	0.07	0.01	-0.06	0.15*	0.07
Studying	Learn basics/planned material†	56.75	26.54	-0.02	0.03	-0.01	0.03	0.08	0.02
	Staying up to study/sleeping	48.24	30.28	-0.05	-0.01	-0.06	0.06	-0.02	-0.1
Exercise/diet	Workout/injury	73.16	25.69	-0.13	0	0.02	0.05	0	0.02
	Strict diet/slow diet	76.65	24.24	-0.02	0.23**	0.18*	-0.15*	0.05	0.14
	Forcing exercise/skipping workout	65.73	26.41	-0.13	0.04	-0.13	0.03	-0.13	-0.09
Drugs/medicine	Performance drugs/avoiding drugs	88.42	18.26	-0.08	0.08	0.20**	-0.03	-0.12	0.11
	Medicine/temporary symptoms	53.81	30.90	0.17*	-0.02	0.14*	-0.21**	0.12	0.20**
Travelling	Traffic shortcut/planned route	59.46	29.28	-0.09	0.03	-0.09	0.03	-0.07	-0.07
	Stopping hike/continuing†	56.19	30.07	-0.04	0.08	-0.02	0.08	0.16*	-0.05

*p <.05, **p <.01, ***p<.001; † = Reverse scored item

CHAPTER 6

GENERAL DISCUSSION

The present set of studies investigated how standards may have influence on goal pursuit and external behaviors. Study 1a found people did not spend more time to allocate steps when they were close to the standard (vs far under or above). Study 1b found people in the standard condition (vs do-your best) did not lie by a larger amount, but they did lie more often. Study 2a found participants in the below standard (failure) condition did not indicate that they were more likely to visit the tutor than those in the above standard (success) condition. Study 2b found there were no differences in number of links clicked or percentage of participants who clicked any links based on goal state (success/failure) and amount (minor/major). Study 3 explored how people might think about situations where standards directly compete with the goals they serve and identified profiles that did not have any clear associations with existing traits.

Role of standards in goal pursuit

Standards in goal pursuit can influence people's actions and goal success. In goal systems theory, standards (or subgoals) serve to segment goal pursuit into smaller pieces that are more manageable. Means to pursue a standard also should advance the overarching goal (Kruglanski et al., 2015). While standards may have unintended consequences or conflict with the overarching goal, they usually function as intended for that overarching goal in many situations. That is,

focusing on hitting a dieting goal for a day should help someone eventually achieve their dieting goal that may span over months.

In the current studies, specific implications about goal standards outside of the relevant goal were unclear. In the context of a goal pursuit, standards serve to break goals down into smaller pieces with more proximal ends. This process alone is likely not strictly positive or negative but comes with some trade-offs. However, standards in general do seem to drive goal related efforts and goal attainment. This change in attention or effort related to the goal could have some external effects on situations or goals that are not directly related to the standard. It remains possible that standards could affect people's perceptions or behaviors. As seen in Study 1b, participants who were told that they underperformed relative to a standard were more likely to lie when self-reporting their score on a word task. In a similar way, the drive produced by salient standards should shape how people think and act.

Alternatively, one possibility is that the effect of standards is relatively contained to the goal with which it is associated. If this is the case, standards should have less of an influence on goals than a superordinate goal. For example, failing an exam may not cause a student to change up their habits and reduce their social activity with friends, but the risk of failing a course may have more of an influence on their decision to shift more time and energy toward schoolwork. In the same way that goals vary in importance, standards should also vary in the extent to which a person considers them valuable beyond their own utility. If standards within one goal do not exert enough driving power, failing at standards might not feel important unless the overarching goal is salient. In Study 1a, participants did not spend any additional time allocating steps to the

previous week when it was possible to meet existing standards. In this case, the desire to finish the survey quickly was likely stronger than the desire to see these standards accomplished.

While it remains possible that standards conflict with their designated goal, the current studies aimed at investigating these scenarios fail to provide additional insight into how people may think about these conflicts. Situations like taxi drivers being less efficient on slow days (Camerer et al., 1997) may mean that people lose out on overall progress because of held standards, but it remains unclear what may make particular people more susceptible to disproportionately valuing standards. Similarly, the "what the hell" effect or related cusp catastrophe may mean that failing to hit a standard can be an important enough event to derail further progress toward a goal (Cochran & Tesser, 1996; Carver & Scheier, 1996). In this way, a runner with a goal of running a marathon who is cautious of an injury may stop a run prematurely to avoid this injury; however, this failure for the day may make them feel worse about their goal progress overall. In situations like these, standards serve to motivate but may carry threats to overall progress if a person feels that standard failure is indicative of a larger issue. Determining which personal factors could be related to these possible negative effects of standards could open the door to helping people proactively prevent themselves from feelings that may lead to a backfire effect. In Study 3, I tested situations where standards may compete with overarching goals to attempt to find individual differences that may relate to these evaluations; however, the current set of traits did not follow any clear patterns. Part of this issue may stem from the scenarios that were chosen to represent the standard/goal conflict, as not all situations clearly isolated this issue. However, goal pursuit in daily life may often be messy and

involve choices between actions that could vary along other dimensions and/or bring up concerns about unrelated goals or values.

Further, one aspect of goal pursuit in day-to-day life is that people may fail to track their own behaviors, and still may accomplish goals without strict tracking or short-term standards. Similarly, people may use loose targets for their standards based on how they feel, which may work to sufficiently increase motivation for eventual success. These loose targets could allow for people to be less strict about success and failure when considering smaller chunks of goal pursuit. This approach to goal pursuit may have benefits: if people can benefit from standards with less risk of violations negatively affecting their long-term goal, they may be more successful than if they had rigidly set standards for achievement.

Another consideration is that people may be differentially affected by simply the feeling of having hit or missed a standard and actually having hit a standard. People may recognize this difference and only want standard success if it is meaningful. For example, in Study 1a, participants could attain values over the given standard, but this attainment was retroactive and may not have felt the same as a genuine experience of standard attainment. Often when people set goals, there are implicit or explicit restrictions to what qualifies as success, and standards might only exert strength when people consider the attainment to be genuine. Alternatively, there still may be instances where people can convince themselves that just having hit the target is enough to be considered success. For instance, a dieter tracking their calories with a specific

calorie goal may decide to not track a food that would put them over their limit and consider that they have done well enough for the day to still consider their daily standard as achieved.

Limitations

The present studies had several limitations. First, the instances of behavior or attitudes were all focused on imagined, remembered, or relatively short-term goals. In order to see the effects of how standards might impact goal pursuit, longer periods of time of actual goal pursuit experience may be required. Next, some instances of behavior occurred in relatively low frequencies among participants. For example, in Study 1b, not many participants lied to inflate their score. Given the operationalization of lying behavior in this study, some participants may have felt the backstory for the score error was not believable or not worth inflating their score for. In cases where the stakes are higher, people may be more influenced to alter their behavior by lying (etc.) when the outcome matters more directly to them. As another example, not many participants clicked on links to view external articles in Study 2b. In this case, the incentive to view information that might be helpful for their goal might not seem convincing or worth the participants' time. Allowing participants to choose whether to seek out information allowed for more external validity but may have come at the cost of detecting any effects that may exist.

Future directions

Future studies could continue to probe how standards may affect goal pursuit within and across particular goal systems. This work could be expanded by testing what other factors may influence whether a standard exerts undue influence on an overarching goal or competing goal. One possibility is that standards may only feel disproportionately important in specific types of goals, or only in goals that are deeply personal and/or relevant. Determining traits or personal

characteristics that may predict how people think about standards could be one useful way of helping people utilize standards more successfully.

Another extension of the present work could investigate how changes in time frames and target end states may affect how people are driven by standards. Study 2a presented a situation to participants where there was a clear deadline and a set amount of work that they had planned for the upcoming week before the deadline. In specific cases like these, people may be less driven by standards if they know that the end state is relatively close in time. Tracking how people pursue goals over time when different time pressures/deadlines are present could be one way to determine how standards might exert their influence on behavior or reactions to goal scenarios. Specifically, some goals occur over time spans that have clear end dates whereas other goals are indefinite, and goals may have finite ends or remain ongoing (Etkin, 2019).

Conclusion

Past research has investigated how people pursue goals and think about standards. In the present set of studies, I aimed to expand our knowledge of how people think and act in the context of standards both independently and in conjunction with overarching goals. Previous theorizing on the value of increments of goal progress suggest that people value increases in progress most when near but not yet past a standard. In empirical tests of this idea, past work in our research lab has demonstrated that people display nonlinear perceptions of goal behaviors relative to standards. As a result of this value structure, standards may have a disproportionate impact on how people feel about goal pursuit. If standards do hold additional value, people may be willing to accept trade-offs for standard attainment, may be less willing to utilize opportunities after standard attainment, and choose standard attainment over long-term progress in some instances. However, the current set of studies fail to find evidence to support the main

hypotheses and future investigations should aim at determining how and when people are affected by standards in various ways. Understanding how standards may influence thoughts and behaviors has implications for helping people be more effective self-regulators. For example, if overattention to standards can lead people to miss out on opportunities, interventions could be designed to help people recognize that they should still accept useful opportunities when beyond a local standard. Finally, this set of studies aimed to contribute to knowledge of how standards and overarching goals interact; continuing to develop models for how goal hierarchies function should be useful for developing methods for optimal goal pursuit.

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